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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/925,735	08/06/2001	Masaru Kihara	249-187	3183
23117 7590 06/18/2004 NIXON & VANDERHYE, PC 1100 N GLEBE ROAD 8TH FLOOR ARLINGTON, VA 22201-4714			EXAMINER CREPEAU, JONATHAN	
			ART UNIT	PAPER NUMBER
			1746	

DATE MAILED: 06/18/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/925,735

Applicant(s)

KIHARA ET AL.

Examiner

Jonathan S. Crepeau

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM
THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 14 April 2004.
2a) ☒ This action is FINAL. 2b) ☐ This action is non-final.
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-7 is/are pending in the application.
4a) Of the above claim(s) _____ is/are withdrawn from consideration.
5) ☐ Claim(s) _____ is/are allowed.
6) ☒ Claim(s) 1-7 is/are rejected.
7) ☐ Claim(s) _____ is/are objected to.
8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsman's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____

DETAILED ACTION

Response to Amendment

1. This Office action addresses claims 1-7. The claims are newly rejected under 35 USC §103, as necessitated by amendment. Accordingly, this action is made final.

Claim Suggestions

2. In claim 7, "the alkaline storage battery" in the preamble lacks proper antecedent basis. Appropriate correction is suggested but not required.

Claim Rejections - 35 USC § 103

3. Claims 1-3 and 5-7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ovshinsky et al (U.S. Patent 5,523,182) in view of Ogasawara et al (U.S. Patent 6,576,368).

Regarding claims 1-3 and 5, in column 26, line 45 et seq., Ovshinsky et al. teach a method of preparing a positive active material by chemically oxidizing nickel hydroxide and then either chemically or electrochemically reducing it. Regarding claims 2 and 3, a cobalt compound is coated on the surface of the nickel hydroxide (see col. 26, line 55 et seq.; col. 25, lines 33-41). Regarding claim 6, a positive electrode comprises a porous substrate and a slurry of the active material and a binder (see col. 10, lines 31-37; col. 21, lines 44-50). Regarding claim 7, an alkaline storage battery comprises the positive electrode, a negative electrode, a separator, and an alkaline electrolytic solution (see col. 6, line 25; claim 5 of the reference).

While Ovshinsky et al. teach that the nickel hydroxide can be chemically oxidized with an oxidizing agent such as sodium hypochlorite in column 26, line 22, the reference does not expressly teach the steps of immersing the nickel hydroxide in an alkaline solution at a temperature of 40-60°C and adding an oxidizing agent, as recited in claims 1, 2, and 3.

Ogasawara et al. is directed to a positive active material for an alkaline storage battery. In column 4, line 10 et seq., the reference teaches that a beta-nickel hydroxide material is subjected to an oxidation treatment with an oxidizing agent (e.g., sodium hypochlorite) in an aqueous alkaline solution. In column 4, line 32, the reference teaches that the alkaline solution is preferably maintained at a reaction temperature of 10-50°C.

Therefore, the invention as a whole would have been obvious to one of ordinary skill in the art at the time the invention was made because the artisan would be motivated to oxidize the material of Ovshinsky using the protocol of Ogasawara et al. In column 3, line 6, Ogasawara et al. teach the following:

Subjecting the β -nickel hydroxide, together with the additive, to an oxidation treatment in an aqueous alkaline solution, according to the present invention, results in the provision of a positive active material which, when incorporated into a battery, cannot only reduce the discharge reserve but also increase the oxygen overvoltage during charge to improve charge acceptance, leading to a high discharge capacity of the battery. Although an exact reason

As, such, the artisan would be motivated to oxidize the material of Ovshinsky using the protocol of Ogasawara et al. Further, regarding the temperature, the reference teaches the following in column 4, line 31:

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of 10-50° C. If the reaction temperature is below 10° C., the oxidation reaction may be retarded. On the other hand, if it exceeds 50° C., the reduced discharge capacity may result which is conceivably explained by the following reason: The excessively high reaction rate causes the rapid and selective oxidation of secondary particle surfaces of nickel hydroxide to result in the conversion of β -nickel hydroxide to the γ -nickel oxyhydroxide, via the β -nickel oxyhydroxide. This change in crystal form causes the active material to fall off, leading to a lower loading thereof.

As such, the artisan would be motivated to perform the oxidizing treatment at a temperature of between of 10-50°C, thereby rendering the claimed range of 40-60°C obvious. Furthermore, regarding claim 3, the cobalt compound would be oxidized to a higher order by treatment with the alkaline solution.

4. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ovshinsky et al. in view of Ogasawara et al. as applied to claims 1-3 and 5-7 above, and further in view of JP 11-144723.

Ovshinsky does not expressly teach that the average valence of the nickel is between 2.10 and 2.30, as recited in claim 4.

In the abstract, JP 11-144723 teaches a nickel hydroxide active material having an average nickel valence of 2.1 to 2.3.

Therefore, the invention as a whole would have been obvious to one of ordinary skill in the art at the time the invention was made because the disclosure of JP '723 would motivate the

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artisan to adjust the average valence of the nickel hydroxide of Ovshinsky et al. to be in the range of 2.1 to 2.3. In the abstract, JP '723 discloses that this "increase[s] the discharge capacity in a high-rate discharge of a battery." Accordingly, this would sufficiently motivate the artisan to adjust the average valence of the nickel hydroxide of Ovshinsky et al. to be in the range of 2.1 to 2.3.

Conclusion

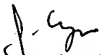
5. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, THIS ACTION IS MADE FINAL. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jonathan Crepeau whose telephone number is (571) 272-1299. The examiner can normally be reached Monday-Friday from 9:30 AM - 6:00 PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Randy Gulakowski, can be reached at (571) 272-1302. The phone number for the organization where this application or proceeding is assigned is (571) 272-1700. Documents may be faxed to the central fax server at (703) 872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


Jonathan Crepeau
Patent Examiner
Art Unit 1746
June 16, 2004